

VII. ARGUMENT

A. Whether claim 1 is patentable over U.S. Patent No. 6,980,152 to Steadman, with regards to 35 U.S.C. § 102(e)

1. Case Law

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). For a proper rejection of a claim under 35 USC§102(b), the cited reference must disclose all elements/features/steps of the claim. See, e.g., E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988).

2. US Patent Number 6,980,152 to Steadman et al. (hereinafter "Steadman")

On page 7 of the final Office Action, claim 1 is rejected as being anticipated by Steadman, while claims 2-5 (depending from claim 1) are rejected as obvious over Steadman in view of Barnes.

3. Independent Claim 1

Applicant respectfully submits that independent claim 1 is distinguishable over the present reference in that independent claim 1 recite features that are neither disclosed, taught, nor suggested by the prior art of record. Independent claim 1 is set forth below.

Independent claim 1 provides as follows:

1. A system for countering an airborne threat to an aircraft, comprising:

at least one aircraft having an airborne countermeasures system (ACS) capable of controlling deployment of countermeasures located on said aircraft; and

a central countermeasures management system (CCMS) capable of communicating with said ACS to control said ACS in deployment of said countermeasures located on said aircraft.

4. The Examiner's Rejection

It is stated in the final office action, on pages 7, that:

Claim 1 is rejected under 35 U.S.C. 102(3) as being anticipated by Steadman et al. (152). Steadman et al. (152) disclose a countermeasure system comprising:

- | | |
|---|--|
| a) at least one aircraft; | 140 |
| b) an airborne countermeasure system | 142a, 144a, 144b |
| c) a local countermeasure deployment device | 142b, 150 |
| d) multiple missile threats | col. 3, lines 56-63 |
| e) a central countermeasure mgmt system; | 116; col. 4, lines 22-30 and 56-68; and fig. 4 |
| f) a communication link | 12 |

5. Discussion of the Cited References

Steadman discloses a system for externally cued aircraft warning and defense.

As shown in FIG. 1, Steadman discloses an aircraft 140 having countermeasure devices (e.g., ref #146) and a surveillance system 110 that can send a cue signal 120 to the aircraft 140. The cue signal may activate the countermeasure system 141 associated with the aircraft (col. 3, lines 33-35). The cue signal may "trigger the countermeasure system to protect the aircraft."

6. Patentable Distinctions Between the Present Claims and the Cited References

As stated in the response to both the initial office action and the final office action, Steadman fails to disclose a (CCMS) capable of communicating with said ACS to **control** said ACS in deployment of said countermeasures located on said aircraft, as required by claim 1. Nothing in Steadman indicates the CCMS (processor 116, as identified by the Examiner) has specific knowledge of the ACS (countermeasure system 141, as identified by the Examiner) aboard the aircraft. Steadman makes clear processor 116 collects information on a threat, may identify a threat, and then communicates existence of the threat to the aircraft. The ACS aboard the aircraft then takes action to mitigate the threat. The processor basically cues the aircraft to flip the on-switch for the ACS.

At page 7 of the final office action response, the Examiner indicated this requirement of claim 1 was disclosed at col. 4, lines 56-68. Those lines indicate the processor sends "a cue signal to a countermeasure system 141, 150 [150 is not aboard the aircraft] to trigger the countermeasure system to protect the aircraft 140."

Claim 1 requires control of the ACS by the CCMS. The CCMS of Steadman does not control deployment of countermeasures of the ACS. CCMS does not even have toggle control of the ACS because it cannot turn the ACS off, only on. The disclosure of Steadman fails to disclose every requirement of claim 1 and thus cannot be held to anticipate claim 1.

The rejection of claim 1 as anticipated by Steadman should be withdrawn, as the reference fails to teach every element of the claimed invention. Furthermore, the Applicant submits that claims 2-4 are allowable for at least the reason that they

depend either directly or indirectly from this allowable independent claim. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988).

B. Whether claims 17, 19, and 20 are patentable over U.S. Patent No. 5,992,288 to Barnes, with regards to 35 U.S.C. § 102(b)

1. Case Law

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). For a proper rejection of a claim under 35 USC§102(b), the cited reference must disclose all elements/features/steps of the claim. See, e.g., E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988).

2. US Patent Number 5,992,288 to Barnes

On pages 2 and 3 of the final Office Action, claims 17, 19, and 20 are rejected as being anticipated by Barnes.

3. Independent Claim 17

Applicant respectfully submits that independent claim 17 is distinguishable over the present reference in that independent claim 17 recite features that are neither disclosed, taught, nor suggested by the prior art of record. Independent claim 17 is set forth below.

Independent claim 17 provides as follows:

17. A method of countering an airborne threat to an aircraft, comprising the steps of:
determining threat information about said airborne threat;

transmitting said threat information to a remote device;
transmitting source information to said remote device;
receiving instructions to deploy a countermeasure selected by said remote device, as a result of said steps of determining threat information, transmitting said threat information, and transmitting said source information, wherein said selected countermeasure is presently available; and
deploying said selected countermeasure,
wherein said threat information and said source information is collectively referred to as a track file.

4. The Examiner's Rejection

It is stated in the final office action, on pages 2 and 3, that:

Barnes (288) discloses a method of countering an airborne threat comprising:

- | | |
|---|--|
| a) determining threat information; | col. 4, lines 51-55 |
| b) transmitting threat information to a remote device | col. 3, lines 4-8; 38-41 |
| c) a remote device; | TIC; TEWA; Target/Weapon Pairing Knowledge database; col. 3, lns 8-14, 66-col. 4 ln 26. see fig. 3 |
| d) Transmitting source information | col. 5, lines 23-30 |
| e) receiving instructions to deploy a countermeasure; | col. 5, lines 23-30 |
| f) deploying selected countermeasure; | col. 4, lines 21-26 |
| g) referring to the process as a track file | see fig. 3 |
| h) location of the target being a consideration; and | col. 3, lines 1-20 |
| i) source information is related to time | |

5. Discussion of the Cited References

Barnes discloses a knowledge based threat evaluation and weapon assignment system and method. The system is designed to respond to threats to national security, frequently referring to the airborne threats as 'hostiles' (e.g., column 1, line 15). The system identifies these hostiles and selects weapons to respond to the hostiles if the hostiles fail to turn back or become reclassified as 'friendly'. It is not clear if the system 'an airborne threat to an aircraft'. A location of the device that

"determines threat information" with respect to a location of the TEWA is not made clear.

6. Patentable Distinctions Between the Present Claims and the Cited References

Claim 17 requires steps for "determining threat information" and "transmitting threat information to a remote device". Barnes fails to disclose these requirements. More specifically, Barnes does not disclose the threat information is determined in a location remote from the device to which it is transmitted (if it is transmitted), thus failing to satisfy the "transmitting threat information to a remote device requirement".

The Examiner has identified the TEWA and the TIC as the remote device on page 2 and 3 of the Final Office Action. The "determining threat information" identified by the Examiner appears to be a "Zone Target Table" shown in FIG. 7, which is created by target control 110 (FIGS. 5 and 6) processing, which is a step in the TEWA algorithm 100 (FIG. 5) (See col. 3, lines 66 and 67 and col. 4, lines 20-25). Thus, it appears the Examiner has stated a table created by the TEWA algorithm is transmitted to the TEWA algorithm, which the Examiner indicates satisfies the 'remote device' requirement of claim 17.

The Applicant argued of the omission of a remote device in Barnes in response to the first Office Action, which elicited this response from the Examiner (page 3 of the Final Office Action):

Clearly the threat information (see co. 2, lines 61-67) is and must be transmitted to Target/Weapons Pairing Knowledge Database in order for the prioritizing and pairing to take place (see col. 3, lines 52-65). It is argued that certain passages do not teach

these claim limitations. In response, note that the weapons in each of the assigned zones are remote from each other as well as being remote from the control apparatus (Target/Weapons Pairing Knowledge Database), consequently, it is inherent to the reference that there must be communications in order to function even if the explicit methods of such communications are not disclosed. Such communications being necessary as well as known to one of ordinary skill in the art. It is further argued that a "remote device" is not present. In response see c) in paragraph 3 above [reprinted Section C.3. herein] for an explanation of what portions of Barnes meet this claim limitation. It is further argued that the TIC is a trial intercept calculation and cannot meet the claim limitation directed to a "remote device". In response, it is the TIC in combination with the Target/Weapons Pairing Knowledge Database (see col. 3, lines 8-14) that meet this claim limitation.

The Examiner's explanation appears to indicate that Barnes discloses things that are remote from each other and devices and communication and therefore all the requirements are disclosed explicitly or inherently. The Examiner indicates the remote device is an amalgamation of Target/Weapons Pairing Knowledge Database 30, the TEWA algorithm 100, and the trial intercept calculation (TIC), which is processed by the TEWA algorithm 100 (see col. 5, lines 5-10). So the claim required remote device, is a database, an algorithm, and a calculation. The algorithm creates a Zone Target Table 110 to performed the claim required step "determine threat information." Then the Examiner indicates it is inherent that the threat information is transmitted from the Zone Target Table 110 to the remotely located algorithm (that created the Zone Target Table), the database, and the calculation.

Despite hearing this argument twice in prosecution, the Examiner insists this interpretation of Barnes anticipates the claimed invention. The Applicant submits that there is no clear identification of a 'remote device' as ethereal databases, calculations, and algorithms are not 'devices'. Further, as the algorithm creates a

table that determines threat information, it seems not only non-inherent, but counterintuitive that the table would be remotely located from the algorithm that created the table. The claimed invention directly requires disparate locations of certain objects and acts and Barnes is silent on the location of the database, the algorithm, the calculation, and the table. This silence cannot be interpreted to anticipate the claimed requirement. Thus, Barnes fails to anticipate claim 17.

The rejection of claim 17 as anticipated by Barnes should be withdrawn, as the reference fails to teach every element of the claimed invention. Furthermore, the Applicant submits that claims 19 and 20 are allowable for at least the reason that they depend directly from this allowable independent claim. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988).

C. Whether claims 2-4 are patentable over U.S. Patent No. 6,980,152 to Steadman in view of U.S. Patent No. 5,992,288 to Barnes, with regards to 35 U.S.C. § 103(a)

1. Case Law

It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., In re Dow Chemical, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988), and In re Keller, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

2. U.S. Patent No. 6,980,152 to Steadman in view of U.S. Patent No. 5,992,288 to Barnes

On page 7 of the final Office Action, claims 2-5 are rejected as being obvious over Barnes in view of Malakatas. Claim 5 had already been canceled, so it is presumed the rejection was directed to claims 2-4.

3. Discussion of the Cited References

Steadman is discussed in Section VII.A.4. Barnes is discussed in Section VII.B. 4.

4. Patentable Distinctions Between the Present Claims and the Cited References

Claims 2-4 have been rejected as obvious based upon Steadman in view of Barnes. Claims 2-4 depend from independent claim 1. As articulated in Section VII.A., Steadman fails to disclose every element of claim 1. Barnes fails to overcome the shortcomings of Steadman. Steadman in view of Barnes fails to disclose the requirement of claim 1, which requirements are included, through dependency, in claims 2-4. Thus, claims 2-4 are allowable over Steadman in view of Barnes.

D. Whether claims 7 and 10-16 are patentable over U.S. Patent No. 5,992,288 to Barnes, in view of U.S. Patent No. 6,467,388 to Malakatas, with regards to 35 U.S.C. § 103(a)

1. Case Law

It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., In re Dow

Chemical, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988), and In re Keller, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

2. **US Patent Number 5,992,288 to Barnes in view of U.S. Patent No. 6,467,388 to Malakatas**

On pages 4 and 5 of the final Office Action, claims 7 and 10-16 are rejected as being obvious over Barnes in view of Malakatas.

3. **Independent Claim 7**

Applicant respectfully submits that independent claim 7 is distinguishable over the present reference in that independent claim 7 recite features that are neither disclosed, taught, nor suggested by the prior art of record. Independent claim 7 is set forth below.

Independent claim 7 provides as follows:

7. A method of countering an airborne threat to an aircraft, comprising the steps of:
- receiving threat information about said airborne threat from a remote source;
 - receiving source information about said remote source;
 - determining a type of airborne threat from said received threat information and said received source information;
 - selecting a countermeasure that is presently available by said remote source, wherein said countermeasure is capable of deterring said airborne threat from inflicting damage to said aircraft; and
 - instructing said remote source to deploy said selected countermeasure that is presently available.

4. **The Examiner's Rejection**

It is stated in the final office action, on pages 4 and 5, that:

Barnes (288) applies as previously recited. However, undisclosed is receiving the threat information from the remote source or remote firing unit. Malakatas (388) teaches receiving the threat information from the remote source or remote firing unit (col.

4, lines 40-54). Applicant is providing a particular location for the sensor providing information about the incoming airborne threat in an analogous art setting with expected or predictable results. It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Malakatas to the Barnes method of countering airborne threats and have a method whose method for receiving information is via a sensor located on the remote source or remote firing unit.

5. Discussion of the Cited References

Barnes is discussed in Section B. 4. Malakatas, as shown in FIG. 1A, includes two firing units 12, 112 having linked fire control units 14, 114, which control weapons 16, 116. The firing units 12, 112 are stationary, but target airborne threats and are linked to allow coordinated attack of the airborne threats, particularly when multiple airborne threats exist.

6. Patentable Distinctions Between the Present Claims and the Cited References

The Examiner has rejected most of the subject matter of claim 7 as disclosed by Barnes for reasons identified in the rejection of claim 17. Thus, the Applicant is left to represent that claim 7 is allowable over Barnes for the same reasons claim 17 is allowable over Barnes.

Further, claim 7 has requirements that vary from claim 17 that cannot be rejected simply because claim 17 was rejected. Claim 7 requires getting threat information from a remote source, selecting a countermeasure that is presently available by said remote source, and instructing said remote source to deploy said countermeasure. Taken together, these requirements state the threat information

come from the countermeasure source (both threat information and countermeasure come from the remote source). The Examiner claims these required steps are disclosed by Barnes, specifically responding to the argument in paragraph 7 of the Final Office Action:

It is argued that the claim limitation directed to "instructing said remote source to deploy said selected countermeasure that is presently available" is not met by Barnes. In response, see col. 5, line 48 to col. 6, line 18 of Barnes. Note that the Target/Weapon Pairing Knowledge Database is considered to meet the claim limitation directed to the remote resource and that the deployed and selected countermeasures are considered to be any one of the weapons that is paired to the prioritized targets (see col. 6, lines 8-18 and figs. 3 and 4) via the Target/Weapon Pairing Knowledge Database. The claim language directed to "instructing said remote source to deploy" is directed to the assignment of each of the weapons systems to deploy against the prioritized targets as prioritized by the Target/Weapon Pairing Knowledge Database.

Barnes does not disclose the threat information and the countermeasure originate from the same remote source as required by claim 7. Thus, Barnes fails to disclose "instructing said remote source to deploy said selected countermeasure that is presently available."

Similarly, Malakatas fails to disclose "instructing said remote source to deploy said selected countermeasure that is presently available." As indicated at col. 7, lines 53-56, the linked "firing units are autonomous in monitoring the firing units, and also in the assessment of the threat and the selection of the aerial target to be engaged by them." Thus, the system of Malakatas exchanges data between the firing units, but does exercise control over the other firing units. Thus, Malakatas cannot perform the steps of "selecting" or "instructing" of claim 7. As neither reference discloses the step of instructing said remote source to deploy said selected countermeasure that is

presently available, as required by claim 7, Barnes in view of Malakatas fails to disclose every requirement of the claimed invention.

Claim 7 also requires "selecting a countermeasure that is presently available by said remote source, wherein said countermeasure is capable of deterring said airborne threat from inflicting damage to said aircraft." Neither reference disclose selecting a countermeasure to deter "damage to said aircraft". Malakatas protects one or more stationary objects local to the firing units. Barnes discloses protecting national borders. Neither references discloses selecting a countermeasure to deter "damage to said aircraft." As neither reference discloses the step of selecting a countermeasure that is presently available by said remote source, wherein said countermeasure is capable of deterring said airborne threat from inflicting damage to said aircraft, as required by claim 7, Barnes in view of Malakatas fails to disclose every requirement of the claimed invention.

The rejection of claim 7 over Barnes in view of Malakatas should be withdrawn, as the reference fails to teach every element of the claimed invention. Furthermore, the Applicant submits that claims 10-16 are allowable for at least the reason that they depend either directly or indirectly from this allowable independent claim. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988).

E. Whether claims 1-4, 6 and 21 are patentable over U.S. Patent No. 6,467,388 to Malakatas, in view of U.S. Publication No. 2003/0033059 to Ebert, with regards to 35 U.S.C. § 103(a)

1. Case Law

It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., In re Dow Chemical, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988), and In re Keller, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

2. U.S. Patent No. 6,467,388 to Malakatas in view of US Patent Application No. 2003/0033059 to Ebert et al.

On pages 5 and 6 of the final Office Action, claims 1-6 and 21 are rejected as being obvious over Malakatas in view of Ebert et al.

3. Independent Claim 1

Applicant respectfully submits that independent claim 1 is distinguishable over the present reference in that independent claim 1 recite features that are neither disclosed, taught, nor suggested by the prior art of record. Independent claim 1 is set forth below.

Independent claim 1 provides as follows:

1. A system for countering an airborne threat to an aircraft, comprising:
at least one aircraft having an airborne countermeasures system (ACS) capable of controlling deployment of countermeasures located on said aircraft; and

a central countermeasures management system (CCMS) capable of communicating with said ACS to control said ACS in deployment of said countermeasures located on said aircraft.

4. The Examiner's Rejection

It is stated in the final office action, on pages 5, that:

Malakatas (388) discloses a system for countering airborne threats comprising:

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| a) at least one remote weapon system; | 112, 212 |
| b) a countermeasure system; | 114, 214 |
| c) a central countermeasure management system | 12; col. 13, line 19 to col. 16, line 26 |
| d) a local countermeasure deployment device; | col. 3, lines 23-30 |
| e) multiple missile threats; | col. 5, lines 13-42 |
| f) communication linkage; | 70 |
| g) a description of the counter measures available communicated to the central countermeasure management system; and | col. 15, lines 15-47 |
| h) said CCMS deployed in accordance with a calculated sequence. | col. 7, lines 53-67 |

Malakatas (388) applies as recited above. However, undisclosed is a remote weapon system that is an aircraft with associated countermeasures. Ebert et al. (059) teach a remote weapons system that is an aircraft with associated countermeasures (14, 12, 34, 36, 46). Applicant is substituting one type of remote weapons system with associated countermeasures for another in an analogous art setting as explicitly encouraged by the primary reference (see col. 3, lines 58-62 of Malakatas) with expected or predictable results.

5. Discussion of the Cited References

Malakatas is discussed in Section D.4. Ebert et al. is cited for teaching an aircraft with associated countermeasures, which it does. Specifically, nothing in Malakatas is "capable of communicating with said ACS to control said ACS in deployment of said countermeasures located on said aircraft" as required by claim 1.

6. Patentable Distinctions Between the Present Claims and the Cited References

The Applicant asserts, and has asserted in response to each of the office actions previously, that Malakatas does not disclose a central countermeasures management system. As neither Malakatas, nor Ebert et al. disclose this claim requirement, Malakatas in view of Ebert et al. cannot render claim 1 obvious.

As indicated at col. 7, lines 53-56, the linked "firing units are autonomous in monitoring the firing units, and also in the assessment of the threat and the selection of the aerial target to be engaged by them." Thus, each firing unit operates without being controlled by the others. The Examiner responded to this argument in paragraph 9 of the final Office Action:

It is argued that Malakatas fails to teach "a central countermeasures management system." In response, note that it is the software program that assigns threat values for each of the incoming targets and then assigns a particular firing unit (12, 112, or 212) or some combination thereof to respond (col. 13, line 19 to col. 16, line 26) that meets this claim limitation. The software program effectively acts to control which of the different firing units responds dependent upon the location and distance of each incoming threat. Consequently, it meets the claim limitations directed to "a central countermeasures management system." If this program were not present, the firing units would act completely independently with all or none of them independently responding to a particular threat. It is further argued that Ebert fails to teach a "central countermeasures management system" as claimed. In response, since Malakatas clearly meets this claim limitation, there is no requirement that Ebert provide a teaching in this regard.

Applicant has combed through the cited passage (col. 13, line 19 to col. 16, line 26) and can find no teaching that a program controls the firing units. This cited passage includes many statements that the firing units all operate independently, but are coordinated by shared information. "Each firing control unit itself performs the selection of the target track for the aiming device of its firing unit." Col. 13, lines 52-

54. "The decision of whether to a target change should take place is made by the fire control unit which at that moment is engaging the least threatening aerial target."

Col. 14, lines 33-36. "The target selection for the weapons respectively takes place by means of the individual fire control unit." Col. 14, lines 44-46.

The program the Examiner mentions is discussed from this last citation through col. 15, line 47, but the programs are run by each firing unit, independent of the other firing units' programs. The programs do incorporate data from the other firing units. This statement is delivered home by the repeated phrase "the weapons of the fire control unit performing calculations." Col. 15, lines 16-17; 20-21; 28; 32-33; 36-37; 40-41; and 45-46. None of the firing units surrender control to remote/separate systems.

The rejection of claim 1 over Malakatas in view of Ebert should be withdrawn, as the reference fails to teach every element of the claimed invention. Specifically, Malakatas in view of Ebert fails to disclose a central countermeasures management system (CCMS) capable of communicating with said ACS to control said ACS in deployment of said countermeasures located on said aircraft. Furthermore, the Applicant submits that claims 2-4, 6, and 21 are allowable for at least the reason that they depend either directly or indirectly from this allowable independent claim. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988).